

**JINGHANG XU, PhD Candidate**

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My research focuses on **developing multi-level carbon emission inventories for China at the national, provincial, and city levels**. During my PhD, I have authored **nine peer-reviewed papers** with **over 450 citations**, including one published in *Applied Energy* recognized as both an ESI Highly Cited Paper and an ESI Hot Paper, and another currently in press at *Nature Sustainability*.

Education

PhD in Geography	Sep 2022 – August 2026 (expected) (Supervisor: Prof. Yuli Shan ; Prof. Jonathan Oldfield)	University of Birmingham, UK
MSc in Economics	Sep 2020 – Sep 2021	Durham University, UK
Pre-Masters in Economics	Jan 2020 – Aug 2020	Durham University, UK
BSc in Accounting	Sep 2015 – Jun 2019	Hubei University of Economics, China

Professional experience

Mar 2022 – Jun 2022, Jingshi Wanfang Information Technology Co., Ltd., *Economic Analyst*, Hefei, China
 Oct 2021 – Feb 2022, Longhang Construction Co., Ltd., *Accountant*, Hefei, China
 Jan 2018 – Mar 2018, Dahua Certified Public Accountants, *Audit Intern*, Shanghai, China

Research outputsPublications (* Corresponding author)

- Xu, J.**, Cai, S., Shan, Y.*, Guan, Y., Li, R., Zhang, H., Liu, M.*, Bi, J., Oldfield, J., Li, Y., Zhou, Y., Guan, D.*. (2026). City-level CO₂ emission inventories in China 1997-2023. ***Nature Sustainability***, in press.
- Xu, J.**, Guan, Y., Oldfield, J., Guan, D., Shan, Y.*. (2024). China carbon emission accounts 2020-2021. ***Applied Energy***, 360, 122837. <https://doi.org/10.1016/j.apenergy.2024.122837>. (**ESI Highly Cited Paper & Hot Paper**)
- Yang, R., Cui, K. Y., Ren, M., Li, C. Y., **Xu, J.***, Xue, R., Shan, Y. (2026). Equity-aware carbon reduction targets and implementation pathways considering urban technological heterogeneity and regionally balanced mitigation responsibilities. ***Advances in Climate Change Research***. <https://doi.org/10.1016/j.accre.2026.08.011>
- Cai, S., **Xu, J.**, Guan, Y., Liu, M.*, Tan, C., Bi, J., Shan, Y.*. (2025). City-level process-related CO₂ emissions in China 2000–2021. ***Scientific Data***, 12, 1435. <https://doi.org/10.1038/s41597-025-05782-3>
- Wang, J., Shan, Y.*, **Xu, J.**, Li, R., Zhao, C., Wang, S.*. (2024). Consumption-Based Emissions of African Countries: An Analysis of Decoupling Dynamics and Drivers. ***Earth's Future***, 12(11), e2024EF005008. <https://doi.org/10.1029/2024ef005008>
- Lv, L., Liu, M.*, Shan, Y., **Xu, J.**, Yang, J., Fang, W., Ma, Z., Bi, J. (2025). Mitigating Climate Risk to China's Renewable Energy Generation by Power Plants Redeployment Using a Machine-Learning Model. ***Earth's Future***, 13(4), e2024EF005641. <https://doi.org/10.1029/2024EF005641>
- Sun, K., Tong, K.*, **Xu, J.**, Shan, Y. (2025). Developing a novel city-wide useful energy demand model based on detailed energy conversion processes. ***Energy***, 323, 135833. <https://doi.org/10.1016/j.energy.2025.135833>
- Yu, B., Xu, Z.*, Du, C., **Xu, J.**, Pan, Y., Zhou, J., Shan, Y.*. (2024). Spatiotemporal evolution and drivers of

carbon inequalities in urban agglomeration: An MLD-IDA inequality indicator decomposition. *Ecological Indicators*, 162, 112004. <https://doi.org/10.1016/j.ecolind.2024.112004>

9. Shen, Y., Shi, X.*, Zhao, Z., **Xu, J.**, Sun, Y., Liao, Z., Li, Y.*, Shan, Y.*. (2023). A dataset of low-carbon energy transition index for Chinese cities 2003–2019. *Scientific Data*, 10(1), 906. <https://doi.org/10.1038/s41597-023-02815-7>

Report Contributions

1. **Contributor** to *The Fifth National Assessment Report on Climate Change, Special Report 2: Climate Change and Cities* (ongoing, with supervisor).
2. *CO₂ Emissions Report of Emerging Economies 2023-2025*. Tsinghua University Press, 2023-2025.

Research Projects

1. **Participant** of EU Horizon and Ministry of Science and Technology of the People's Republic of China
Building roadmaps to industrial decarbonisation and green economy through EU-China cooperation (EU-CHINA-BRIDGE) (no. 101137971, UKRI: 10132630), 04/2024-03/2027, PI: Chun Xia + Da Yan
2. **Participant** of The Royal Society and NSFC, International Exchanges shared cost
Optimising climate and air quality-related benefits of the transition to Net-Zero, 03/2023-03/2025, PI: Yuli Shan + Miaomiao Liu

Academic Activities

Conference Presentations / Invited Talks

1. **Xu, J.** City-level CO₂ emission inventories in China, 1997–2022. *12th International Conference on Industrial Ecology (ISIE 2025)*, July 2–5, 2025, Singapore.
2. **Xu, J.** City-level CO₂ emission inventories in China, 1997–2022. *City+ Talk Series, Session 13*, May 28, 2025 (Online).
3. **Xu, J.** China carbon emission accounts, 2020–2021. *Environment–Health–Economic Impacts of Net-Zero Solutions in China and the UK: A joint workshop between Nanjing University and the University of Birmingham*, July 12, 2024, Birmingham, UK.
4. Shan, Y., & **Xu, J.** China carbon emission accounts, 2020–2021. *Climate Change Economics Forum*, May 1, 2024 (Online).
5. **Xu, J.**, Shan, Y., Guan, Y., Oldfield, J. Assessment of city-level emissions and peak in China. *11th International Conference on Industrial Ecology (ISIE 2023)*, July 2–5, 2023, Leiden, Netherlands.

Academic Training

CEADs Summer School (2022–2025), China.

Deliver training sessions on carbon emission accounting methods for participants from universities and research institutions.

Academic Service

Reviewer for journals including *npj Urban Sustainability*, *Scientific Reports*, *Risk Analysis* and *Energy Efficiency*.

Awards

1. Award for Outstanding Overseas Study Elite, China Scholarship Council (CSC), Ministry of Education of China, 2026
2. International Academic Exchange Fund, School of Life and Environmental Sciences (£430 + £700), University of Birmingham, 2025
3. Outstanding Graduate, School of Accounting, Hubei University of Economics, 2019
4. Canglong Scholarship, Hubei University of Economics, 2016–2018

Teaching

Teaching Assistant

LC Statistics, 2025 – Assisted with tutorials, student consultations, and coursework assignments.

LC Contemporary Human Geography, 2024 – Assisted with coursework assessment.